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# Community Meeting

## Little Otter River Watershed TMDL & Buffalo Creek Watershed TMDL

20 February 2013, 6:30 PM  
Bedford Public Library

### Agenda

Welcome & Introductions	Mary Dail (DEQ), All	6:30 – 6:40
Project Overview	Mary Dail	6:40 – 7:10
Little Otter River Watershed & Buffalo Creek Watershed TMDLs	Gene Yagow (VT BSE)	7:10 – 7:50
Big Otter River Project Update	E.B. Watson, Terri Bollinger (Peaks of Otter SWCD) & Mary Dail	7:50 – 8:10
Next steps, Wrap-Up, Questions	Mary Dail, All	8:10 – 8:20

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# Meeting Rules

- Minimize jargon
- Stick to the agenda times
- Others?

# **Project Overview:** **Little Otter River Watershed TMDL** **Buffalo Creek Watershed TMDL**

Mary Dail, DEQ-Roanoke  
Second (and Final) Public Meeting

February 20, 2013





# Overview

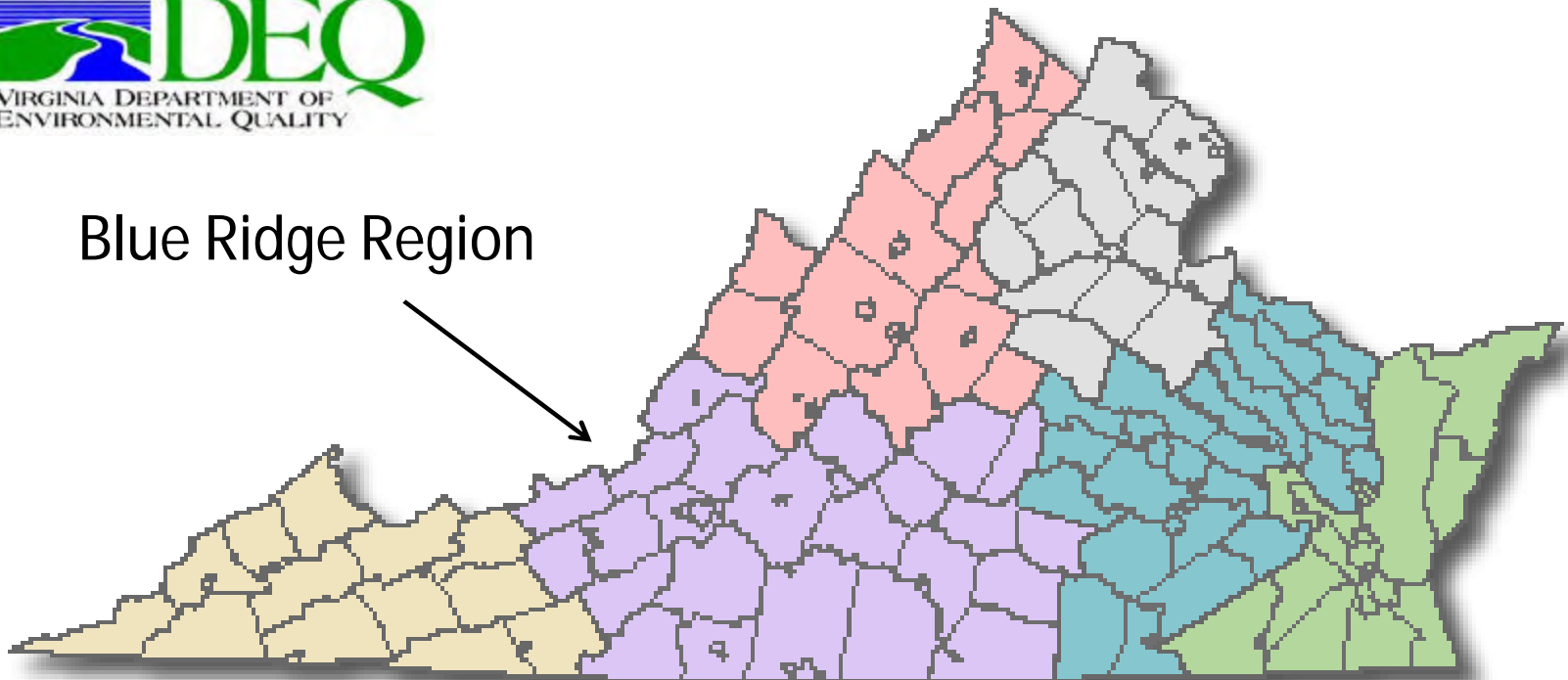
- Background
- Water Monitoring
  - Water chemistry
  - Biological monitoring
- What is a TMDL?
- What Happens after a TMDL Study?



# DEQ Regions

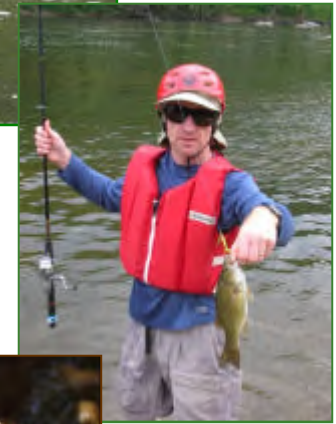


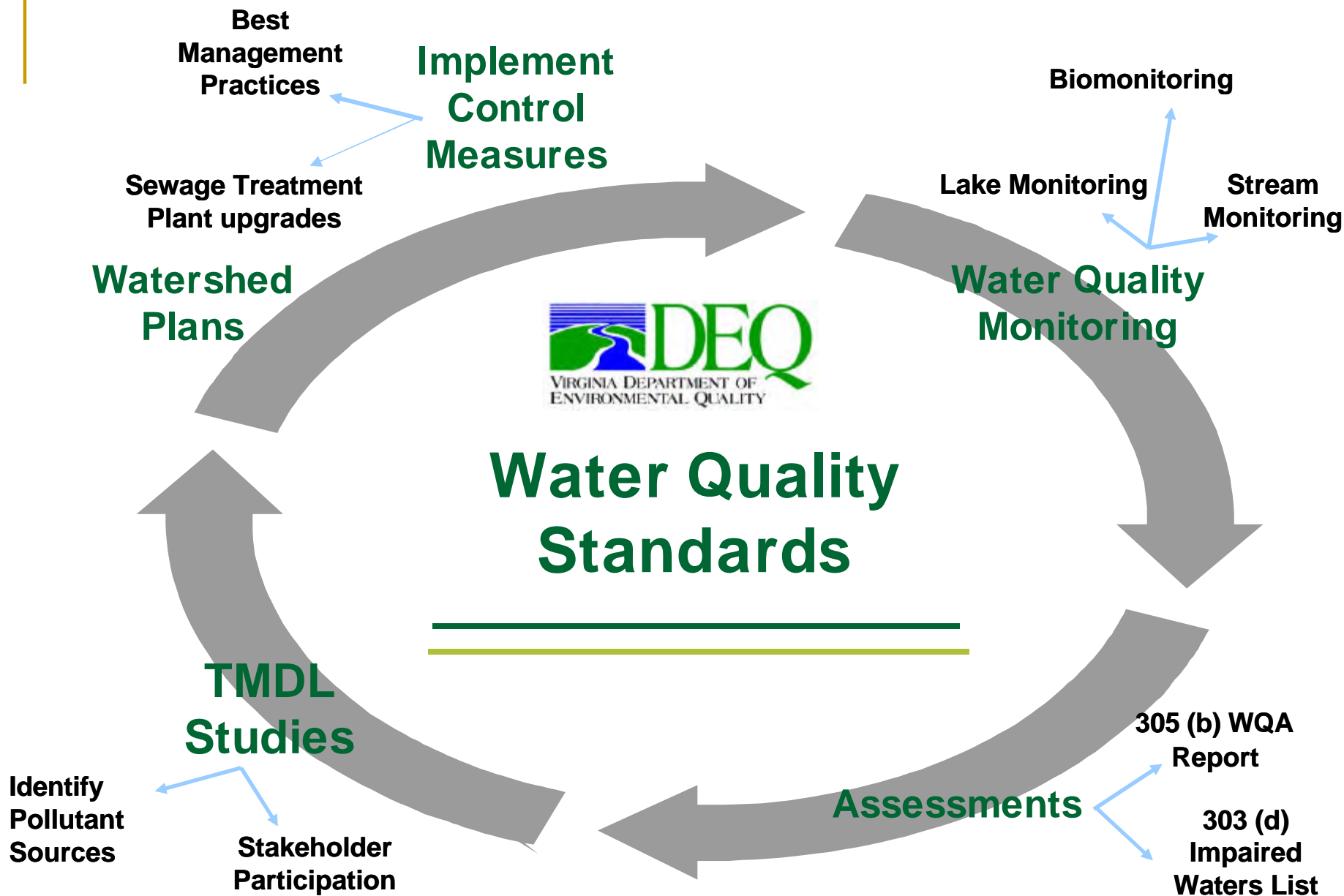
Blue Ridge Region



# Why does DEQ Monitor Water Quality?

- 1972 Clean Water Act
- 1997 Water Quality Monitoring, Information, and Restoration Act
- Water Permits (VA Pollution Discharge Elimination System permitting, Section 402, Clean Water Act)
- TMDLs, Citizen requests, reporting on overall statewide water quality





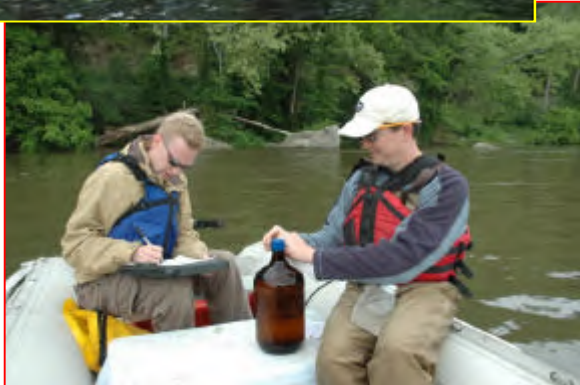
# Virginia's Water Quality Standards

- Adopted to uphold the Clean Water Act
- Protects the 6 designated uses: aquatic life, wildlife, fishing, shellfish, swimming, and drinking water





# How does DEQ Monitor Virginia's Water Quality?

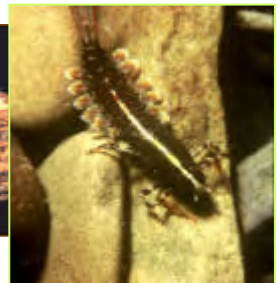
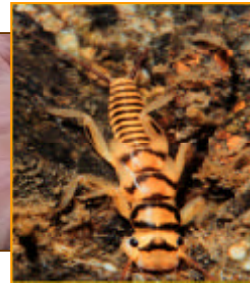


- Water Chemistry
  - ❑ Ambient Water Quality Monitoring Program
  - ❑ Chesapeake Bay Program
  - ❑ Probabilistic Monitoring Program
- Aquatic Organisms
  - ❑ *Biological Monitoring Program*
  - ❑ Probabilistic Monitoring Program
- Toxics
  - ❑ Special Studies
  - ❑ Pollution Response Program
  - ❑ Probabilistic Monitoring Program

# How does DEQ monitor water quality?

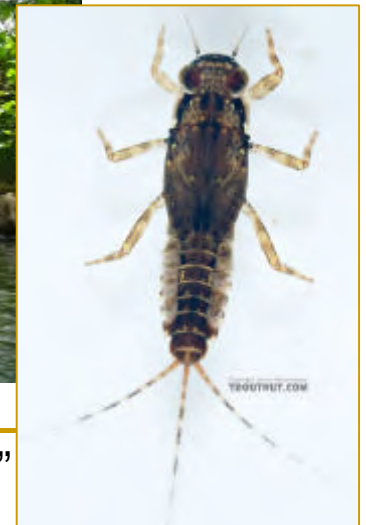
- Biological Monitoring = Biomonitoring!
  - Collect a sample of the aquatic invertebrate community, spring & fall
  - Aquatic invertebrates respond to chronic conditions
- Habitat Analysis
- Virginia Stream Condition Index used to assess community:

*A tool that rates river and stream water quality based on the bug population (types and the number of bugs) found on the stream bottom.*



# What makes a “healthy” aquatic invertebrate community?

- Diversity
- Presence of pollution intolerant invertebrates
  - Stonefly, Mayfly & Caddisfly larvae
- Habitat
- VSCI Score > 60



Ephemerellidae / “Hedricksons”  
or “Pale Morning Dun”



# A Reference Community



Stoneflies

Dragonflies,  
Damselflies

Mayflies

**VSCI SCORE**  
**~70-80**

Beetles

Midges

Caddisflies

1 inch



# Moderately Impacted



Caddisflies

Crane flies

Non-insects

Midges

Beetles

Stoneflies

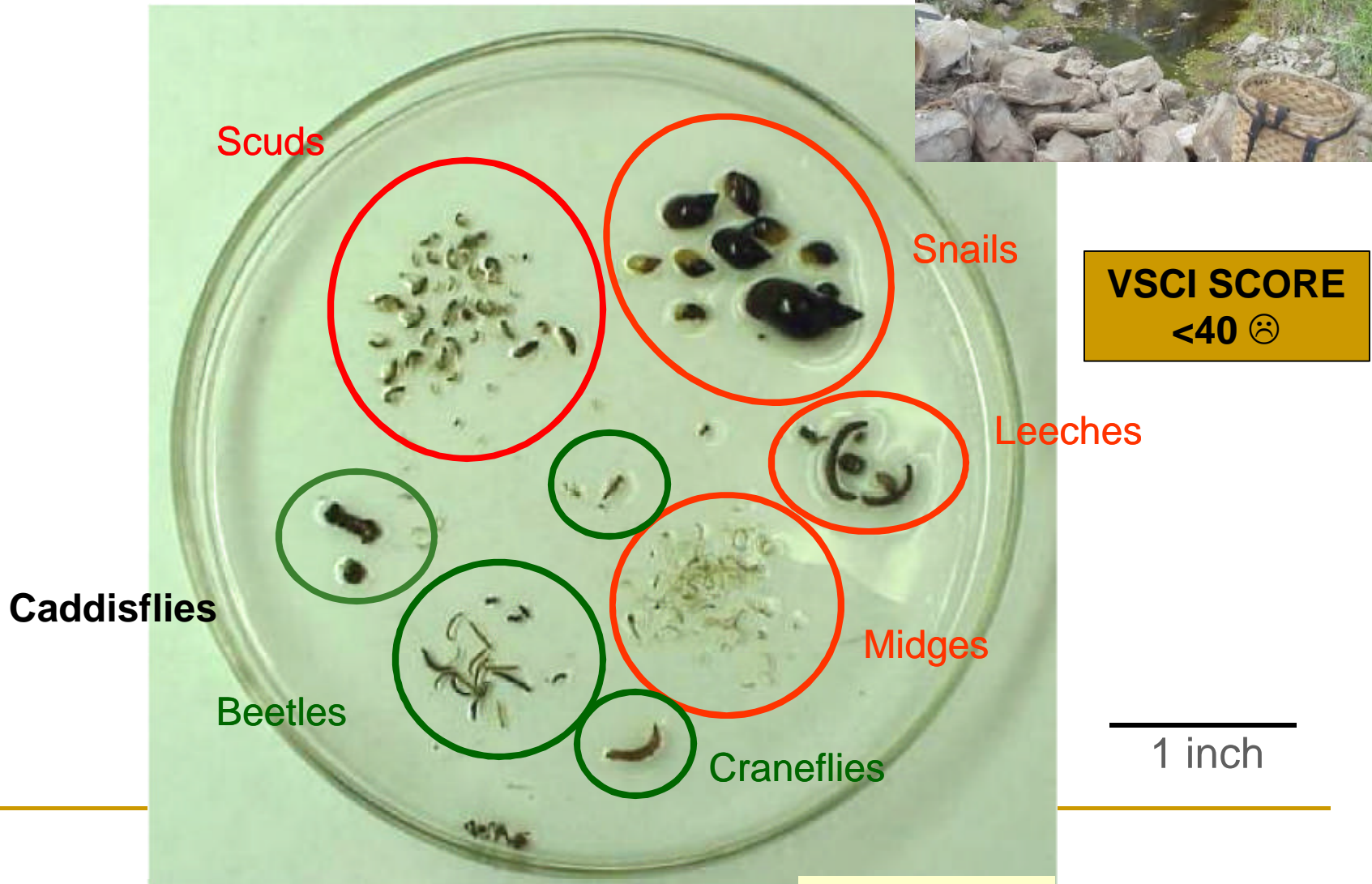
Blackflies

Mayflies

VSCI SCORE  
~50-65

1 inch

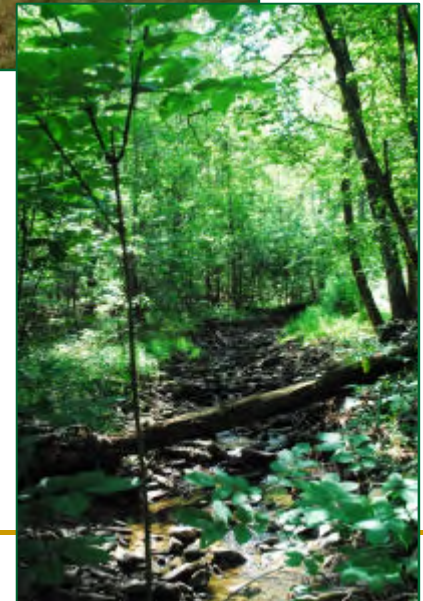
# Severely Impacted



# What makes a “healthy” aquatic invertebrate community?

## ■ Habitat Score

- ❑ Stream sediment
- ❑ Bank vegetation & stability
- ❑ Human disturbance
- ❑ Availability of a variety of rocks & woody materials



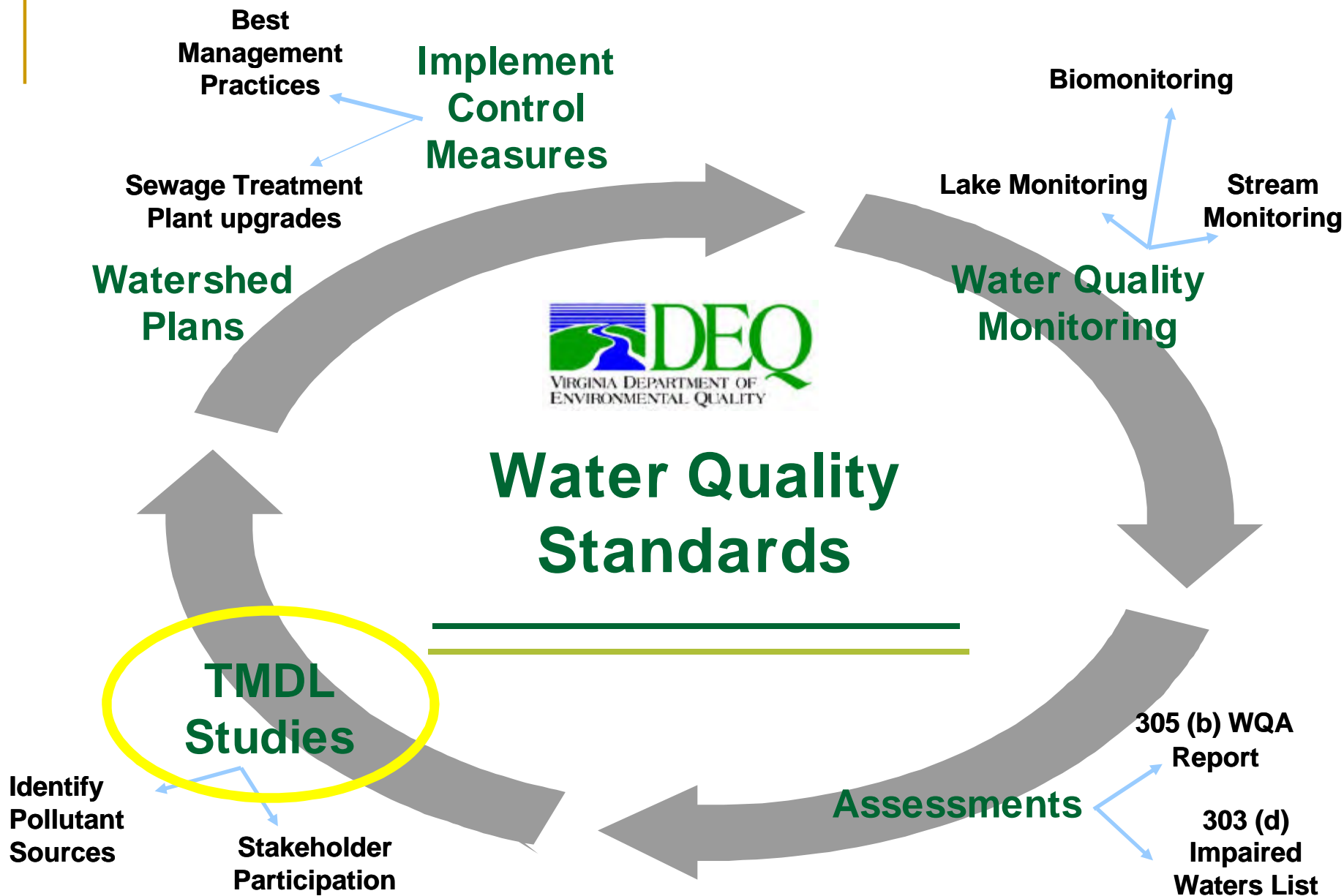


# Habitat Evaluation: Sedimentation

- DEQ collects periodic quantitative sediment data
- DEQ Biologists score sedimentation during spring and fall site visits



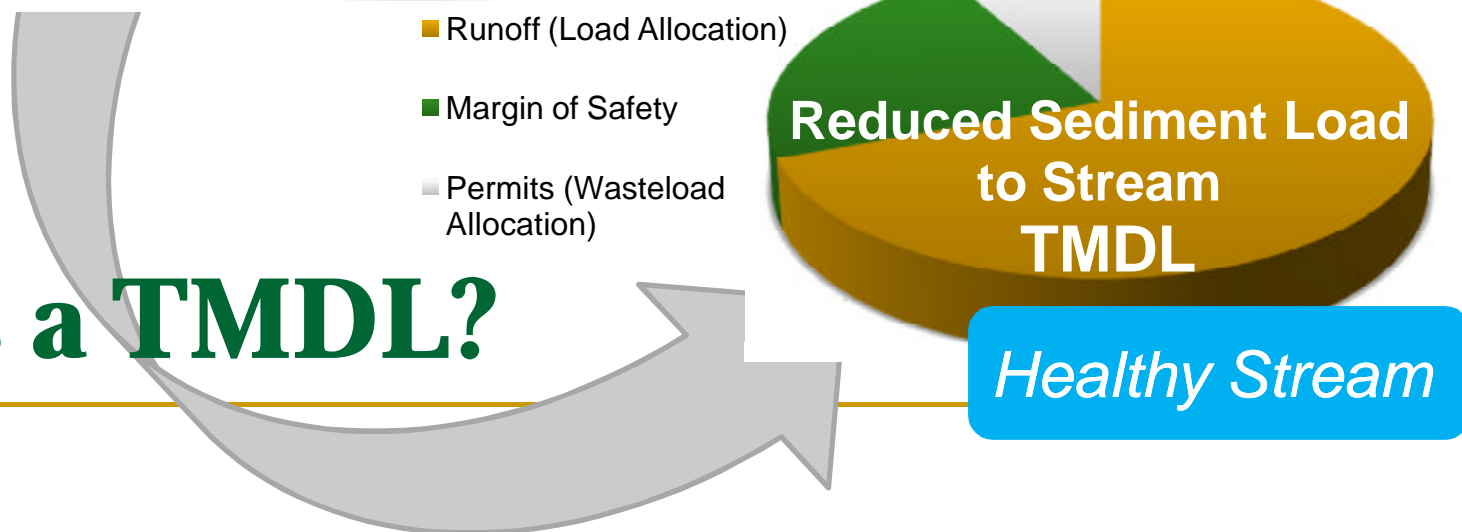




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# What is a TMDL?

- TMDL = Total Maximum Daily Load
  - The amount of pollution a stream can receive and still meet Water Quality Standards
  - A study and a report which...
    - Identifies sources of pollution
    - Calculates the amount of pollution from each source.
    - Calculates the necessary pollution reductions
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**What is a TMDL?**

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# What is a TMDL?

- An Opportunity for Partnerships!
    - ❑ DEQ is the lead agency & works closely with a contractor
    - ❑ Supported by DCR, Soil & Water Conservation District, localities, other state agencies
    - ❑ Citizen, producer, landowner, and industry input is necessary for an accurate and successful TMDL
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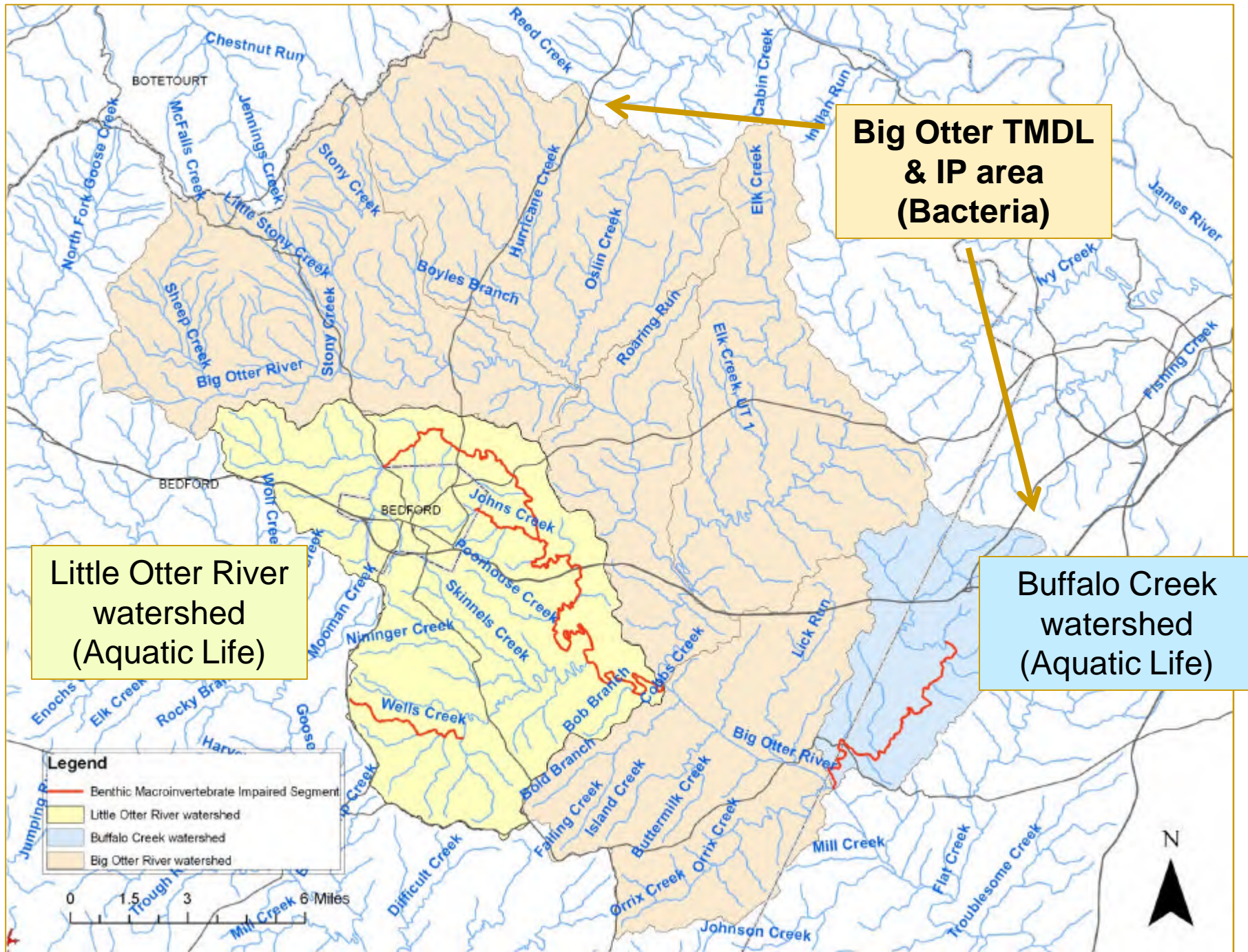
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# Why do TMDLs?

- Improve **Water Quality**
  - It's the LAW!
    - Federal 1972 Clean Water Act
    - Virginia's 1997 Water Quality Monitoring Information and Restoration Act (WQMIRA)
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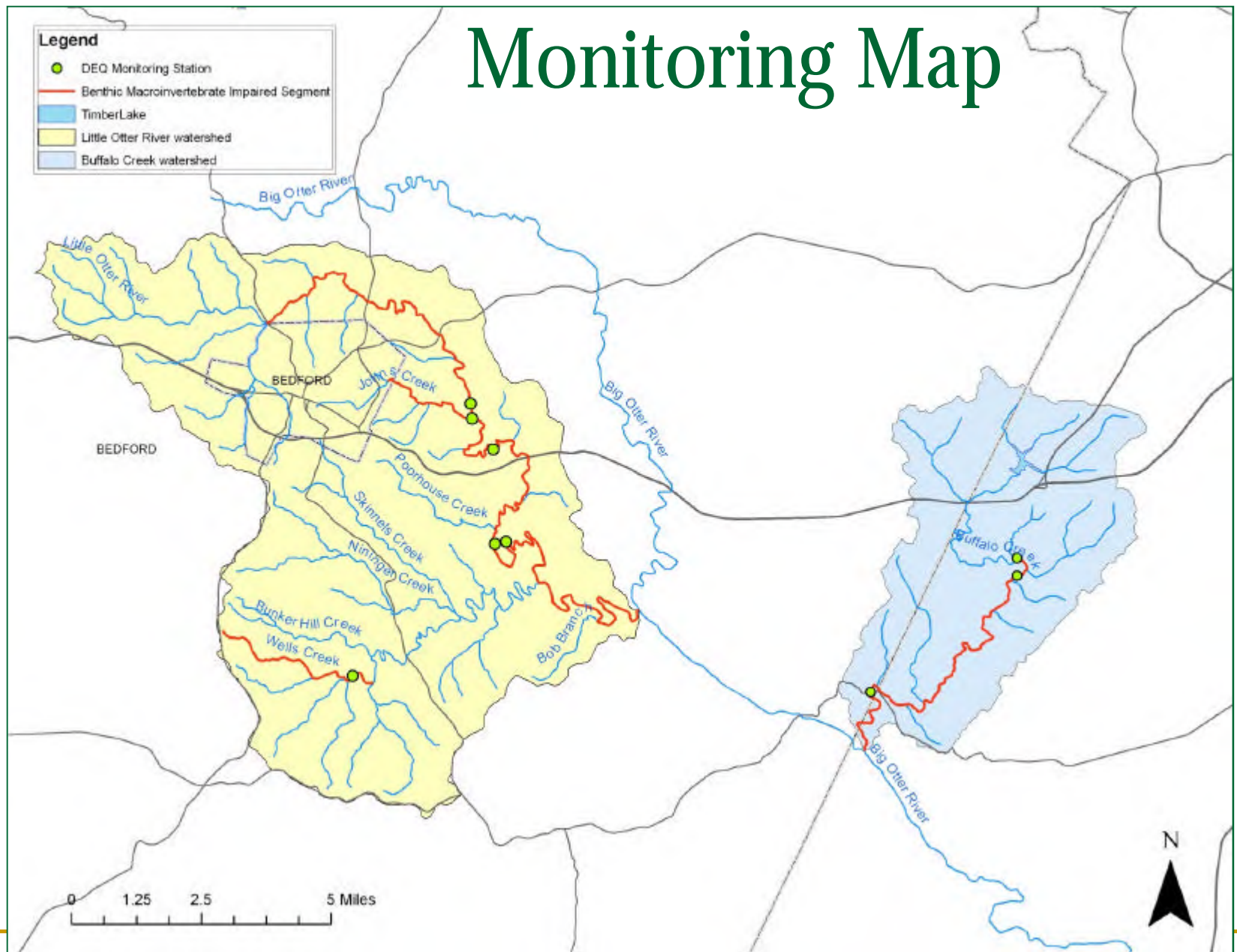
# What Happens after a TMDL Study?

- TMDL Implementation (DEQ/DCR)
  - Gather local community, government and other stakeholders through public meetings
  - Develop a Clean-up Plan
    - Inventory of water quality improvement projects/best management practices (BMPs)
    - Cost-benefit analysis
    - Measurable goals & Milestones
  - Hit the Ground Running (DCR/SWCDs)
    - Installation of BMPs **IN PROGRESS**
- Follow-up Monitoring
  - Track water quality improvement
- Ultimate Goal = Meet Water Quality Standards!





# Monitoring Map





# Monitoring Stations

Stream Name	DEQ Station ID	Station Location
Buffalo Creek	4ABWA002.00	Below Rt. 24 Bridge
Buffalo Creek	4ABWA008.53	Along Rt. 623 near New London
Johns Creek	4AJHN000.01	confluence of Johns Creek and Little Otter River
Little Otter River	4ALOR007.20	Downstream of Nicopolas Dr (784)
Little Otter River	4ALOR008.64	Rt. 784 Bridge, Bedford Co.
Little Otter River	4ALOR012.20	Waskey Property downstr of Rt. 718
Little Otter River	4ALOR014.33	Below Bedford STP outfall, Bedford Co.
Little Otter River	4ALOR014.75	RT. 718 bridge above Bedford STP outfall, Bedford Co.
Wells Creek	4AWEL000.59	Downstream of Rt. 747 crossing
Wells Creek	4AWEL001.14	Upstream of Rt. 722

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# Contact Information

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**Johns Creek**

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